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ABSTRACT:

PROBLEM TO BE SOLVED: To reduce occurrence of slip defect at a wafer edge by specifying the length of a flat part of the wafer and the angle in a wafer <100> direction.

SOLUTION: Related to a GaAs substrate where a flat part is formed at a part of a [001] wafer 2, a flat part (OF) 4 is equal to 1/4 or less of the diameter of the wafer 2 while a center 4a of the OF is in a range equal to or less than 10°; from <100> direction of the wafer 2. A GaAs substrate where a notch part 24 is formed at a part of [001] wafer 22 may be used. Related to the GaAs substrate, the radius of curvature R of the notch part 24

is $1/50$ or less of
the diameter of the wafer 22, with an open angle θ ,
being 90° or more
while the center 24a of radius of curvature is in the range
of 10° or less
from the $\langle 100 \rangle$ direction of the wafer 22. Here, since the
flat part and the
notch part are formed in a $\langle 100 \rangle$ direction wherein a slip
defect is hard to
occur in a high-temperature process, the occurrence of slip
defect near the
flat part and that near the notch part are reduced.

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